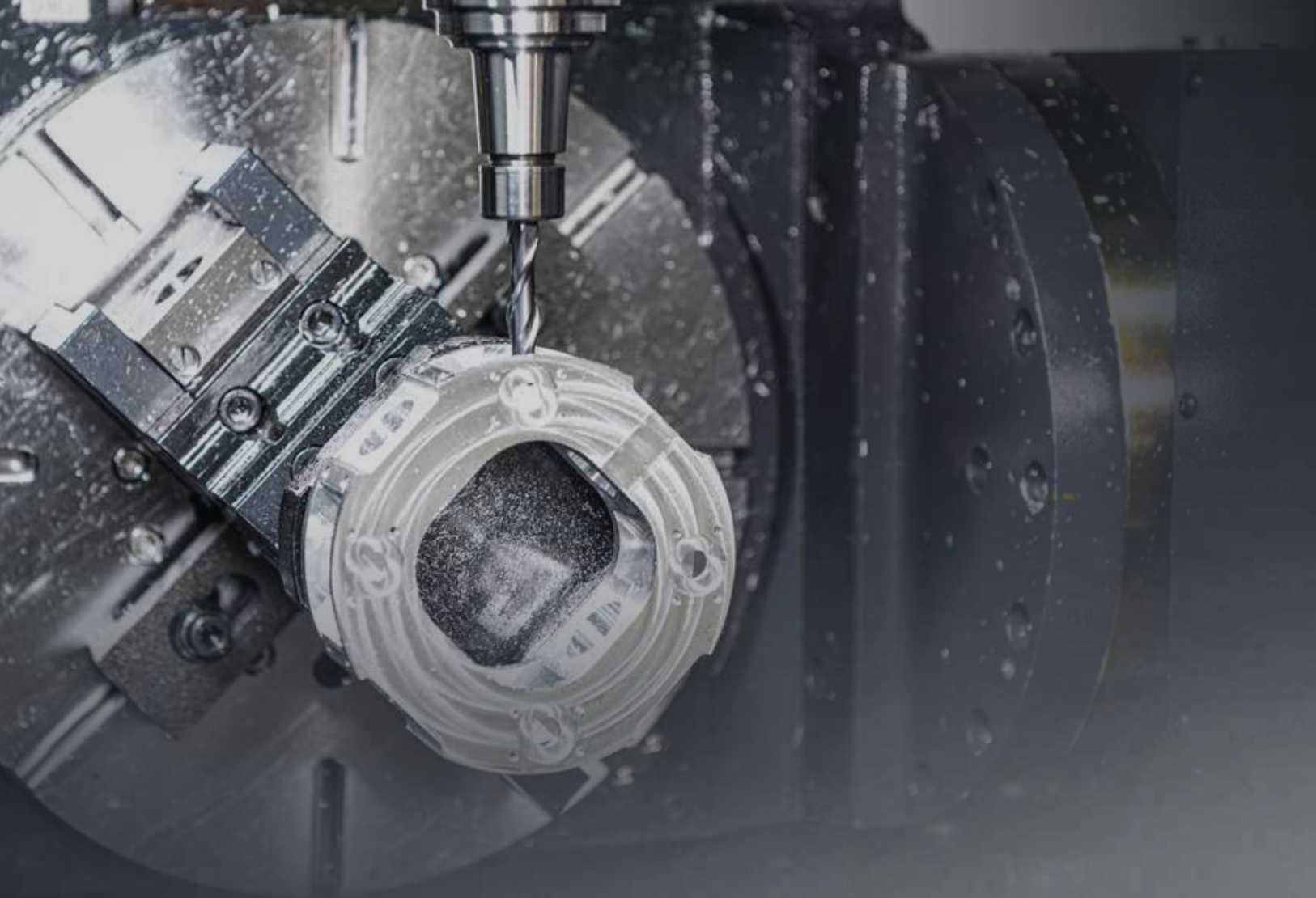


HYUNDAI WIA
High Precision 5-axis Vertical Machining Center

KF-5A Series

KF3500/5A | KF7300/5A



Technical Leader

The Vertical Machining Center KF-5A Series designed by Hyundai WIA with years of expertise and the latest technology, ensures performance requirements of the mold industry.

In addition, KF-5A Series can process products of various shapes with 5-axis table design.

		KF3500/5A	KF7300/5A
Table Size (L×W)	mm(in)	Ø350 (Ø13.8")	Ø630 (Ø24.8") [Ø730 (Ø28.7")]
Max. Load Capacity	kg(lb)	250 (551) - Max. Inertia : 2.09 kg.m ²	500 (1,102)
Sp. Taper	-	BBT40	BBT40 [HSK-A63]
Sp. Speed	r/min	12,000 [15,000] [20,000]	12,000 [20,000]
Sp. Power (Max./Cont.)	kW(HP)	18.5/11 (25/15) [18.5/11 (25/15)] [22/18.5 (29.5/25)]	22/18.5 (29.5/25) [22/18.5 (29.5/25)]
No. of Tools	EA	30 [40, 60]	40 [60]
Travel (X/Y/Z)	mm(in)	400{+200}/655/500 (15.7"{+7.9"}/25.8"/19.7")	765/650/520 (29.5"/25.6"/20.5")
Rapid Traverse Rate	m/min	36/36/30	40/40/40

[] : Option

KF-5A Series

Best Performance in the Class & 5-axis Machining

- 5-axis table to satisfy various processing needs
- KF3500/5A : C Type, KF7300/5A : Wall type structure for stable machining
- High speed built-in main spindle for the utmost quality of molds
- High-speed roller type LM guide in all axes
- Hyundai WIA mold package for optimal processing of mold parts
- Improved user convenience by applying the latest controller of FANUC



01 KF3500/5A

Super Quality & productivity 5-axis Vertical Machining Center

ATC & Magazine

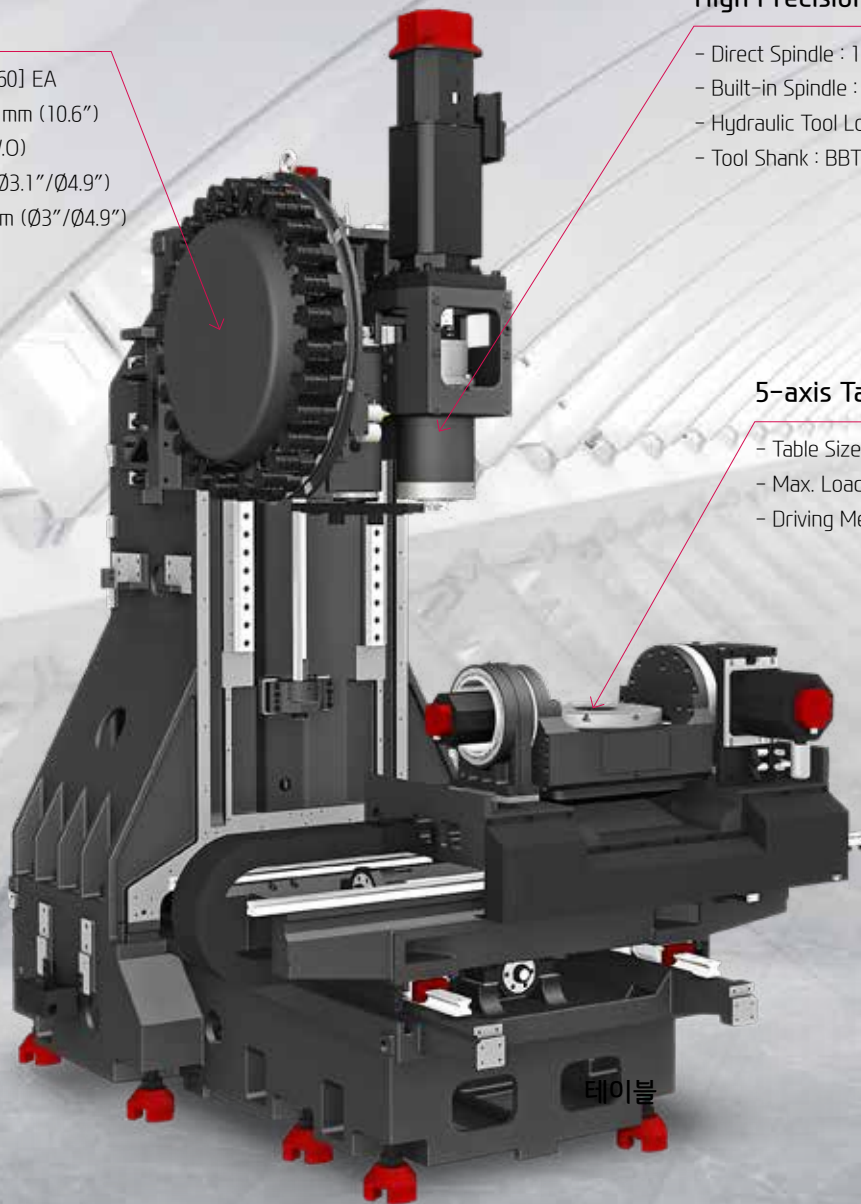
- No. of Tools : 30 [40, 60] EA
- Max. Tool Length : 270 mm (10.6")
- Max. Tool Dia. (W.T/W.O)
30T : $\varnothing 80/\varnothing 125$ mm ($\varnothing 3.1"/\varnothing 4.9"$)
40, 60T : $\varnothing 76/\varnothing 125$ mm ($\varnothing 3"/\varnothing 4.9"$)

High Precision Spindle

- Direct Spindle : 12,000 [15,000] r/min
- Built-in Spindle : [20,000] r/min
- Hydraulic Tool Lock Method
- Tool Shank : BBT40

5-axis Table

- Table Size : $\varnothing 350$ mm ($\varnothing 13.8"$)
- Max. Load Capa. : 250 kg (551 lb)
- Driving Method : Roller Gear Cam



HIGH PRECISION & HIGH SPEED

HIGH-PRECISION STRUCTURE

Optimal Structural Analysis

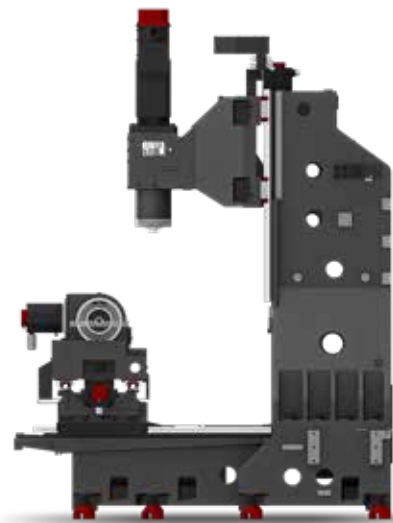
KF3500/5A is designed to have optimal structure through Hyundai WIA's unique structural analysis.

In particular, enhancement of bed and column's rigidity makes excellent performance even in heavy duty cutting.

Optimization of Installation Area

Installation is convenient even in small spaces with compact size of 6.5m 2 and it improves space efficiency for the factory of customers.

Floor Space (L×W) **3,255×1,900** mm (128.1"×74.8")



GUIDE WAY

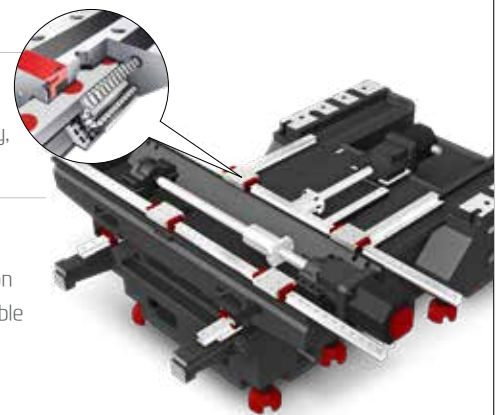
High-Speed Roller LM Guideway

By applying an roller LM guide structure with high speed and rigidity, rapid traverse rate of **36m/min** is achieved based on the X/Y axis.

Ball Screw

The pretensioned ball screw minimizes the expansion and contraction according to the heat and further reinforces the rigidity by the double anchor support method.

<3 Row bearing / Z-axis ball screw : + Oil + Air Lubricated>



Rapid Traverse Rate (X/Y/Z) (A/C) **Travel (X/Y/Z)**

36/36/30 m/min **30/40** rpm **400{+200}/655/500** mm (15.7" {+7.9"}/25.8"/19.7")

❖ Very outstanding A/C axis rotation speed with application of roller gear cam

HIGH PRECISION SPINDLE

Excellent machining performance with high-precision spindle

KF3500/5A Spindle Specifications

[] : Option

Speed r/min	Motor (Max./Cont.)	Torque (Max./Cont.)	Driving Method
12,000 rpm	18.5/11 kW (25/15 HP)	118/52.5 N·m (87/38.7 lbf·ft)	Direct
[15,000 rpm]	[18.5/11 kW (25/15 HP)]	[118/52.5 N·m] (87/38.7 lbf·ft)	
[20,000 rpm]	[22/18.5 kW (29.5/25 HP)]	[119.7/63 N·m] (72.3/59 lbf·ft)	Built-in

KF3500/5A Table Specifications

Table Size	Max. Load Capacity	Slope Angle	Rotation Angle	Min. Indexing Angle	Driving Method
Ø350 mm (Ø13.8")	250 kg (551 lb)	+30° ~ -120°	360°	0.001°	Roller Gear Cam

HIGH-PERFORMANCE SPINDLE & TABLE

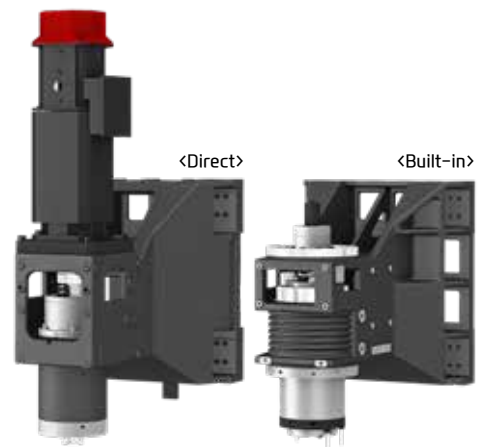
SPINDLE

Direct Driven Spindle

The directly coupled spindle at a maximum revolution of 12,000rpm [Opt. 15,000rpm], allows high-speed processing. Additionally, the large diameter and the thickness of the spindle add to the stability of the machine.

Built-in Spindle **OPTION**

The built-in spindle minimizes spindle vibration, enabling outstanding performance in a high-precision cutting environment such as complex shaped work-piece.

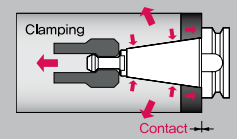


Through Spindle Coolant (20/30/70 bar) **OPTION**

Through Spindle Coolant is exceedingly useful when drilling deep holes. It helps increase the lifetime of the tool, while decreasing cycle time.

Dual Contact Spindle

The Big Plus spindle system (BBT40) provides dual contact between the spindle face and the flange face of the tool holder.



TABLE

5-axis Tilting Rotary Table

The 5-axis tilting rotary table allows users to produce a wide range of complicated work pieces. The 'C' axis has full 360° rotation and the 'A' axis has 150° rotation.

<B/C axis rotary scale standard application>



Roller Gear Cam

KF3500/5A developed with application of accumulative know-how and new technology of Hyundai Wia is a next-generation machining center featuring optimal performance in complex form machining. Also, it has superb precision and durability while also being excellent for 5-axis machining with less power loss even at high-speed rotation.

Torque Delivery Efficiency (Based on 200 N·m)		Displacement upon pressure	
Loss 15%	Loss 40%	235 N·m	
Delivery 85%	Delivery 60%	45µm	100µm
KF3500/5A Roller Gear Cam	Other Companies Worm Gear	KF3500/5A Roller Gear Cam	Other Companies Worm Gear

❖ Superior power delivery efficiency and strength compared to worm gear table of other companies

02 KF7300/5A

Super Quality & productivity 5-axis Vertical Machining Center

ATC & Magazine

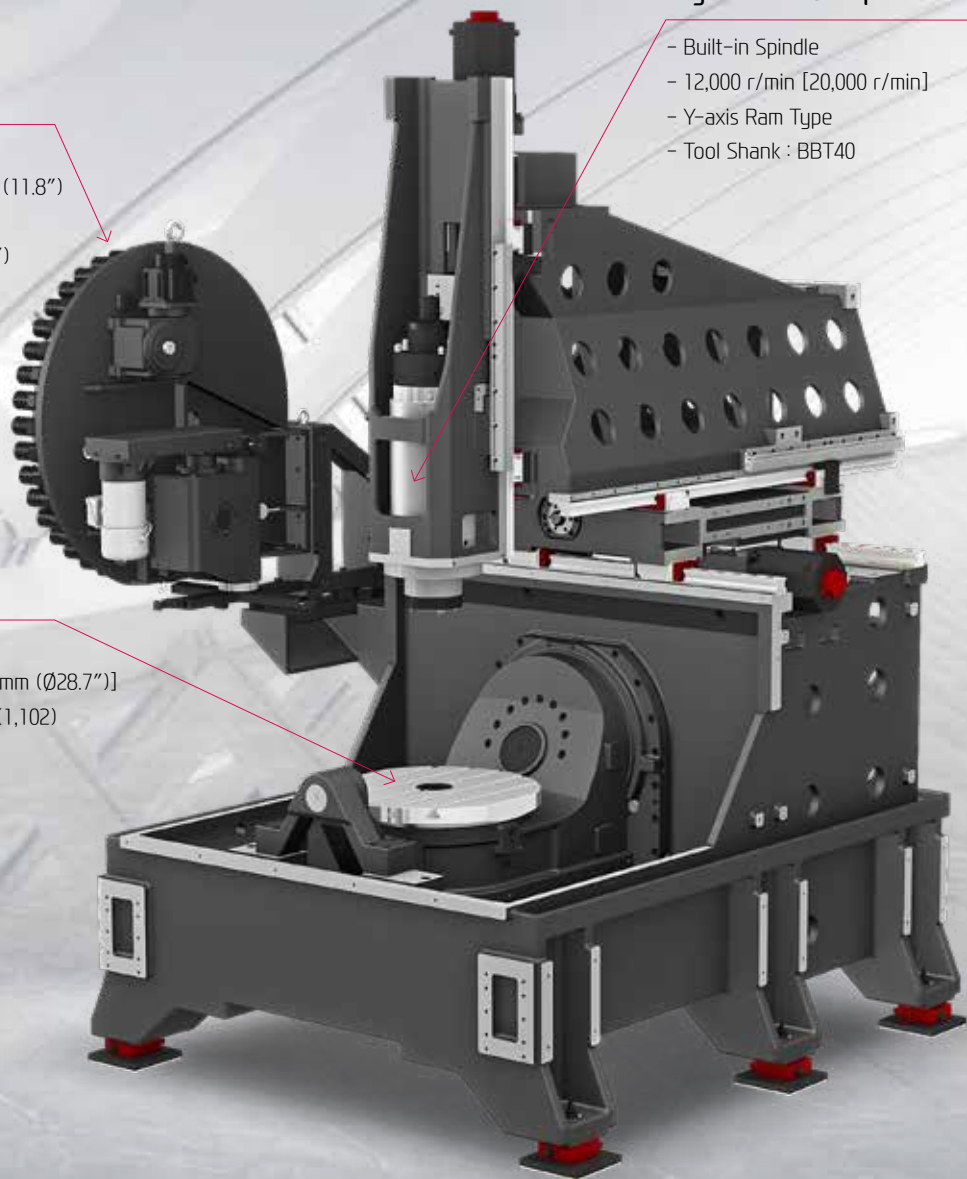
- No. of Tools : 40 [60] EA
- Max. Tool Length : 300 mm (11.8")
- Max. Tool Dia. (W.T/W.O)
Ø76/Ø125 mm (Ø3"/Ø4.9")

5-axis Table

- Table Size
Ø630 mm (Ø24.8") [Ø730 mm (Ø28.7")]
- Max. Load Capa. : 500 kg (1,102)
- Driving Method : Gear

High Precision Spindle

- Built-in Spindle
- 12,000 r/min [20,000 r/min]
- Y-axis Ram Type
- Tool Shank : BBT40



HIGH PRECISION & HIGH SPEED

HIGH-PRECISION STRUCTURE

Wall Type Structure

The structure of KF7300/5A is a wall type for high-precision machining. In particular, the feed is separated from the table to maintain high-precision machining even in heavy work.

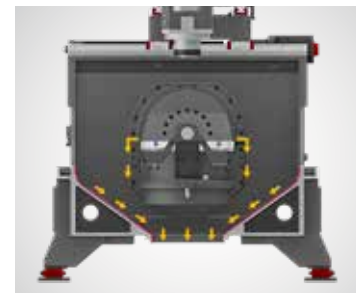
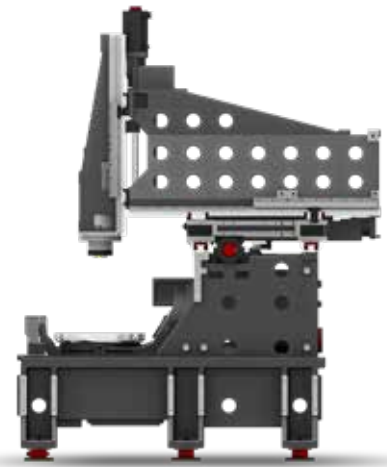
Optimization of Installation Area

Installation is convenient even in small spaces with compact size of 10.1m² and it improves space efficiency for the factory of customers.

Floor Space (L×W) **3,050×3,300** mm (120.1"×129.9")

Direct Chip Discharge Structure

The structure was designed for the chip to fall directly to the lower part of the bed to improve chip discharge capability, and the high-temperature chips and coolant are discharged immediately without accumulating on the bed, minimizing thermal deformation of the structure.



GUIDE WAY

Roller Type LM Guideway

For processing the highest quality mold products, the KF7300/5A is designed with roller LM guideways for high rigidity and enhanced acc/ deceleration.

Grease Lubrication Method

Significant cost savings is achieved by incorporating the grease lubrication system versus the oil lubrication method.



Rapid Traverse Rate (X/Y/Z) (B/C)

40/40/40 m/min **25/30** rpm

Travel (X/Y/Z)

765/650/520 mm (29.5"/25.6"/20.5")

SPINDLE & TABLE

Excellent machining performance with high-precision spindle & table

KF7300/5A Spindle Specifications

[] : Option

Speed r/min	Motor (Max./Cont.)	Torque (Max./Cont.)	Driving Method
12,000 rpm	22/18.5 kW (29.5/25 HP)	204/119 N·m (150.5/87.8 lbf·ft)	Built-in
[20,000 rpm]	[22/18.5 kW (29.5/25 HP)]	[98/80 N·m (72.3/59 lbf·ft)]	

KF7300/5A Table Specifications

Table Size	Max. Load Capacity	Slope Angle	Rotation Angle	Min. Indexing Angle	Driving Method
Ø630 mm (Ø24.8") [Ø730 mm (Ø28.7")]	500 kg (1,102)	+120° ~ -20°	360°	0.001°	Gear

HIGH-PERFORMANCE SPINDLE & TABLE

SPINDLE

Built-in Spindle

The built-in spindle is designed to minimize vibration and heat, as well as deliver rapid acc/ deceleration. Stable precision is maintained even under high speed and heavy duty operations.

Ram Type Spindle

The main shaft of KF7300/5A is a ram-type application, which minimizes the weight of the transported body and greatly improves the dynamic performance.

Spindle Cooling

The spindle cooling system minimizes thermal displacement which can happen during lengthy machining operations, and offers continued accuracy based on the thermal stability.

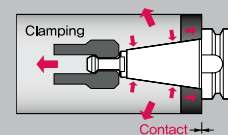
Through Spindle Coolant (20/30/70 bar) **OPTION**

Through Spindle Coolant is exceedingly useful when drilling deep holes. It helps increase the lifetime of the tool, while decreasing cycle time.



Dual Contact Spindle

The Big Plus spindle system (BBT40) provides dual contact between the spindle face and the flange face of the tool holder.

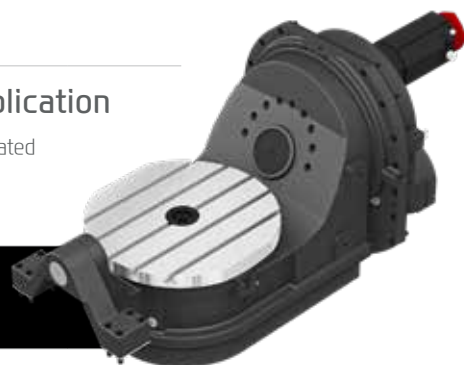


TABLE

5-axis Tilting Rotary Table Standard Application

The rotary table allows users to produce a wide range of complicated work pieces. It is possible to clamp each axis for extra rigidity and accuracy when machining.

- B-axis + support bearing structure (One-side drive type)
- Belt drive : Minimize backlash (Reducer not used)



<B/C axis rotary scale standard application>

03 ATC & MAGAZINE

High Productivity Achieved with High Rigidity, Accuracy Machining

ATC Specifications

[] : Option

Model	No. of Tools	Max. Tool Length	Max. Tool Dia. (W.T/W.O)	Max. Tool Weight	Tool Shank
KF3500/5A	30 [40, 60] EA	270 mm (10.6")	30T : $\varnothing 80/125$ mm ($\varnothing 3.1"/\varnothing 4.9"$) [40, 60T : $\varnothing 76/125$ mm ($\varnothing 3"/\varnothing 4.9"$)]	8 kg (18 lb)	BBT40
KF7300/5A	40 [60] EA	300 mm (11.8")	$\varnothing 76/125$ mm ($\varnothing 3"/\varnothing 4.9"$)		BBT40 [HSK-A63]

HIGH RIGIDITY, TOOL CHANGE SYSTEM

ATC & MAGAZINE

High Speed ATC

Position control through twin arm ATC on servo motors has been improved drastically. In addition, tool exchanging has become easier, reducing specific cutting time tremendously.

Position control on the Twin Arm ATC has improved drastically. The twin arm ATC enables faster tool change and increased productivity.

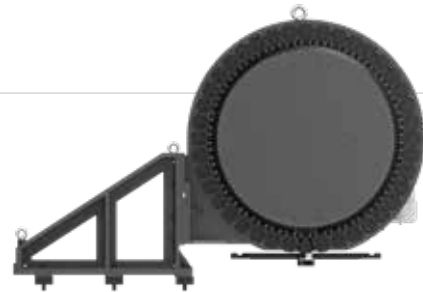


Tool Change Time (C-C)

KF3500/5A : 3.4 sec KF7300/5A : 5.4 sec

Magazine

The tool magazine holds **30 tools** as standard and **60 tools** as an option. Due to the wider selection of tools and the random tool selection method, tool change time has improved.
(KF4600 II : Opt. 40 tools)



HSK TOOL HOLDER (KF7300/5A)

OPTION

HSK tool holder is utilized for precise positioning with less expansion in the spindle taper during high speed rotation. This ensures an excellent level of precision for die mold machining.



HSK-A63

04 MOLD PACKAGE

Powerful Mold Package, HYUNDAI-WIA Mold All in One

MOLD PACKAGE

To enhance mold machining, the "HWM ALL-IN-ONE" is provided as an option feature for KF-5A Series. This ensures accurate and high quality surface finishing and contouring.



HWM ALL-IN-ONE



- ❶ High Speed Contouring Control (AICC II)
- ❷ Development S/W
HW-MCS (Selectable Process Conditions), HW-AFC (Adaptive Feed Control)
- ❸ Main Spindle Cooling Device (8-channel) – Maintain spindle temperature (heat sensor)
- ❹ Cutting Air Blow – Cutting air blow is provided for mold machining.
- ❺ Auto Tool Measuring Device – Detects and sets tool length, and attrition (Graphic User Interface included)

Thermal Displacement Compensation Device ● Cooling system & Lubrication system

Thermal displacement of the spindle is minimized by the use of cooling techniques. This provides high accuracy when machining at high speed.

T.D.C With PT100 Sensor

Interface

T.D.C With Disp. Sensor



MOLD PACKAGE OPTION

1, 2, 3, 4 Package : Option

HWM ALL IN ONE		1 Package	2 Package	3 Package	4 Package
AICC II Package	200 block	●	●		
	600 block			●	
	1,000 block				●
S/W : HW-MCS, HW-AFC		●	●	●	●
Auto Power Off		●	●	●	●
Spindle Heat Distortion Compensation Device		●	●	●	●
Cutting Air Blow		●	●	●	●
Auto Tool Measuring Device (TS27R)		●	●	●	●
Data Server 1GB			●	●	●

05 HYUNDAI WIA FANUC – SMART PLUS

The Compatible All-round Control



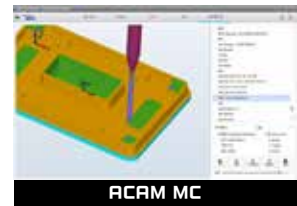
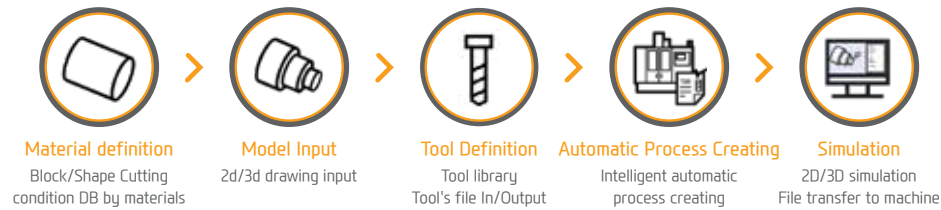
15" Touch-type Monitor as a standard

Smart Machine Control	Fast Cycle Time Technology
Conversational Program	Fine Surface Technology
i-HMI	Smart Guide-i
AI Contour Control	Machining-aid Function
Smooth Tolerance Control	AICC-2 (200 blocks)
JERK Control	0.1 μ m command and specify tolerance
Machining Condition Selection	Diminished vibration by controlling acceleration speed
Machining Quality Control Function	Designated machining level based on speed & quality
Part Program Storage	Smooth Tolerance+ integrated support
No. of Registerable Programs	5120M (2MB)
	1000 EA

ACAM (Automatic CAM)

Cloud-based automatic CAM S/W that automatically creates NC programs only by inputting drawing files

Cloud-based Intelligent Programming



MMS (Machine Monitoring System)



1. MMS Cloud

A cloud server-based equipment monitoring system for collecting and analyzing facility operation data.

2. MMS Edge

A client server-based tool monitoring system for collection/analysis of facility operation data. (Compatible with client MES / ERP interface)

SMART CNC (FANUC SMART PLUS)



1. Dialogue Program (Smart Guide-i)

This software offers the maximum user convenience through dialogue manipulation from setup to processing. This includes writing processing programs and simulation checks.

2. LAUNCHER

This software offers shortcuts for quick access to specialized features and frequently used features.

SPECIFICATIONS

Standard & Optional

		KF3500/5A
Spindle		
12,000rpm (18.5kW)	Direct	●
12,000rpm (18.5kW)	Direct	○
20,000rpm (22kW)	Built-in	○
Spindle Cooling System		●
ATC		
ATC Extension	30	●
	40	○
	60	○
Tool Shank Type	BBT40	●
	BCV40	○
U-Center	D'andrea	-
Pull Stud	45°	●
Table & Column		
T-Slot Table		●
NC Rotary Table	Built-in	●
Coolant System		
Std. Coolant (Main Spindle Nozzle)		●
* Through Spindle Coolant	20bar	○
	30bar, 20 ℓ (5.3 gal)	○
	70bar, 15 ℓ (4 gal)	○
	70bar, 30 ℓ (7.9 gal)	○
Top Cover		●
Shower Coolant		○
Gun Coolant		○
Bed Flushing Coolant		○
Air Gun		○
Cutting Air Blow		○
Tool Measuring Air Blow (Only for TLM)		○
Chip Disposal		
Coolant Tank	365 ℓ (96.4 gal)	●
Interior Screw Chip Conveyor		●
Upper Chip Conveyor (Hinge)	Left	○
	right	○
Screw Type Chip Conveyor	Left	☆
	right	☆
Drum Filter Type Chip Conveyor	Left	☆
	right	☆
	rear	☆
Chip Wagon	Standard (180 ℓ)	○
	Swing (200 ℓ)	○
	Large Swing (290 ℓ)	○
	Large Size (330 ℓ)	○
	Customized	☆
S/W		
Automatic CAM (HW-ACAM)		-
Dialogue Program (HW-DPRO)		○ (3+2 axis support)
DFIC software (HW-eDFIC)		○
Machine Monitoring System (HW-MMS Cloud)		☆
Machine Monitoring System & Analysis (Customer Installation : HW-MMS Edge)		☆
Smart Guide-i : FANUC		●
Smart S/W		☆
Thermal Displacement Compensation Device		○

● : Standard ○ : Option ☆ : Prior Consultation - : Non Applicable

		KF3500/5A
Electric Device		
Call Light	1 Color : ●	●
Call Light & Buzzer	3 Color : ● ● ● B	○
Electric Cabinet Light		○
Remote MPG		●
3 Axis MPG		○
Work Counter	Digital	○
Total Counter	Digital	○
Tool Counter	Digital	○
Multi Tool Counter	Digital	☆
Electric Circuit Breaker		○
Transformer	30kVA	○
Auto Power Off		●
Back up Module for Black out		○
Measuring Device		
Air Zero	TACO	-
	SMC	-
Work Measuring Device		○
TLM	TLM	○
	Laser	-
Tool Broken Detective Device		-
Linear Scale	X/Y/Z Axis	○
Rotary Scale	A/C	○
Coolant Level Sensor (Bladder Type)		☆
Environment		
Air Conditioner		○
Oil Mist Collector		☆
Oil Skimmer (Only for Chip Conveyor)		○
MQL (Minimal Quantity Lubrication)		☆
Fixture & Automation		
Auto Door		○
Auto Shutter (Only for Automatic System)		-
Sub O/P		☆
External M Code 4EA		○
Automation Interface		☆
I/O Extension (In & Out)	16 Contact	☆
	32 Contact	☆
Hyd. Device		
Standard Hyd. Unit	70bar/15 ℓ	●
Central Hyd. supply	6 port, Max. 70bar	○
Hyd. Unit for Fixture	Customized	☆
ETC		
Tool Box		●
Customized Color	Need for Munsel No.	☆
CAD&CAM Software		☆

*1 : Please check the filter types with sales representative.

Specifications are subject to change without notice for improvement. / Please refer to the S/W catalog (IRIS) for details by S/W product.

SPECIFICATIONS

Standard & Optional

● : Standard ○ : Option ☆ : Prior Consultation - : Non Applicable

		KF7300/5A
Spindle		
12,000rpm (22kW)	Built-in	●
20,000rpm (22kW)	Built-in	○
Spindle Cooling System		●
ATC		
ATC Extension	40	●
	60	○
Tool Shank Type	BBT40	●
	HSK-A63	○
	BCV40	○
U-Center	D'andrea	☆
Pull Stud	45°	●
Table & Column		
T-Slot Table		●
NC Rotary Table	Gear	●
	DDM	-
Coolant System		
Std. Coolant (Main Spindle Nozzle)		●
* Through Spindle Coolant	20bar	○
	30bar	○
	70bar	○
Top Cover		●
Shower Coolant		○
Gun Coolant		○
Bed Flushing Coolant		○
Air Gun		○
Cutting Air Blow		○
Tool Measuring Air Blow (Only for TLM)		○
Air Blow for Automation		☆
Thru MQL Device (Without MQL)		☆
Coolant chiller (Sub Tank)		☆
Power Coolant System (For Automation)		☆
Chip Disposal		
Coolant Tank	340 ℓ (89.8 gal)	●
Interior Screw Chip Conveyor		-
Chip Conveyor (Hinge/Scraper)	Left	○
	right	☆
	rear	☆
Special Chip Conveyor (Drum Filter)		☆
Chip Wagon	Standard (180 ℓ)	○
	Swing (200 ℓ)	○
	Large Swing (290 ℓ)	○
	Large Size (330 ℓ)	○
	Customized	☆
S/W		
Automatic CAM (HW-ACAM)		-
Dialogue Program (HW-DPRO)		○ (3+2 axis support)
DNC software (HW-eDNC)		○
Machine Monitoring System (HW-MMS Cloud)		☆
Machine Monitoring System & Analysis (Customer Installation : HW-MMS Edge)		☆
Smart Guide-i : FANUC		●
Smart S/W		☆

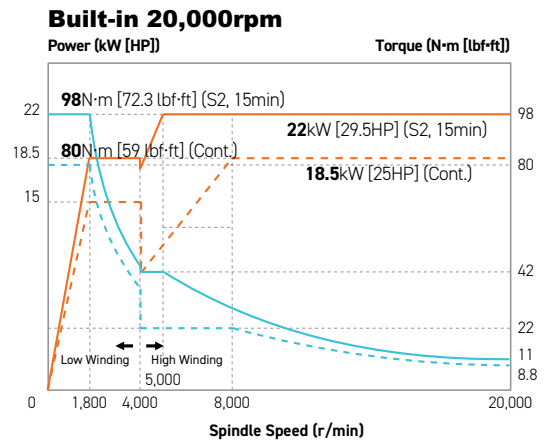
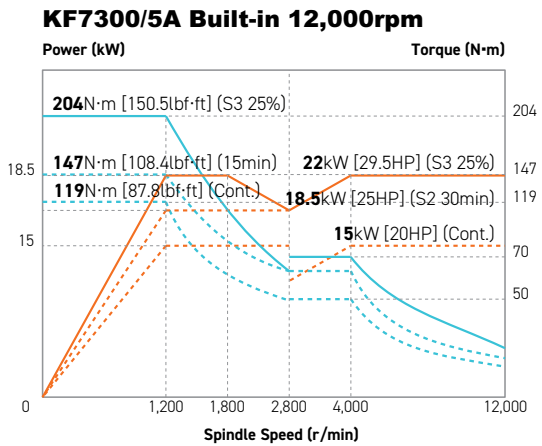
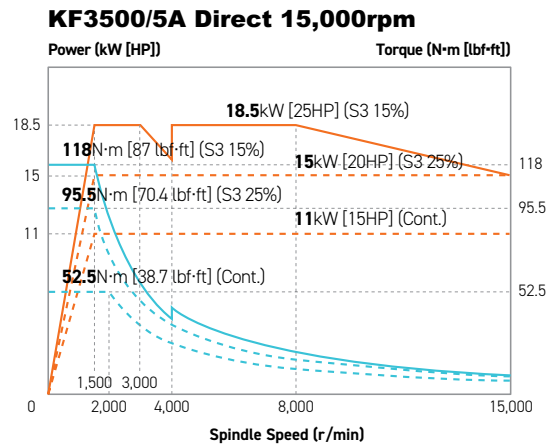
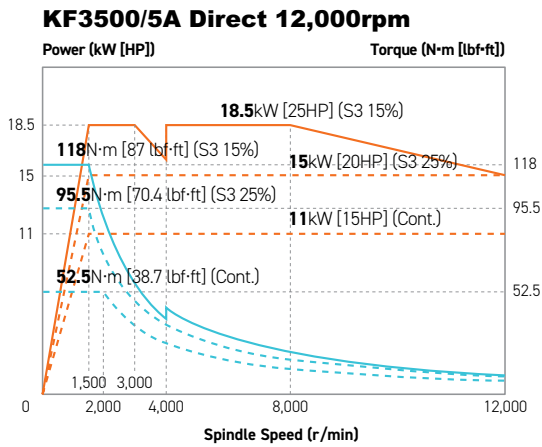
		KF7300/5A
Electric Device		
Call Light	1 Color : ●	●
Call Light & Buzzer	3 Color : ● ● ●	○
Work Light		●
Electric Cabinet Light		○
Remote MPG		●
3 Axis MPG		○
Work Counter	Digital	○
Total Counter	Digital	○
Tool Counter	Digital	○
Multi Tool Counter	Digital	☆
Electric Circuit Breaker		○
Transformer	30kVA	○
Auto Power Off		○
Back up Module for Black out		○
Measuring Device		
Air Zero	TACO	●
	SMC	○
Work Measuring Device		○
TLM	TLM	○
	Laser	○
Tool Broken Detecting Device		☆
Linear Scale	X/Y/Z Axis	○
Rotary Scale	B/C Axis	●
Coolant Level Sensor (Bladder Type)		☆
Environment		
Air Conditioner		○
Eco-friendly energy (hydraulic device/chip conveyor saving mode)		○
Dehumidifier		○
Oil Skimmer (Only for Chip Conveyor)		○
MQL (Minimal Quantity Lubrication)		☆
Fixture & Automation		
Auto Door		○
Auto Shutter (Only for Automatic System)		○
Sub O/P		☆
NC rotary Table/F	Single	-
	Channel	-
Control of Additional Axis	1 Axis	-
	2 Axis	☆
External M Code 4EA		○
Automation Interface		☆
I/O Extension (In & Out)	16 Contact	☆
	8 Contact	☆
Hyd. Device		
Std. Hyd. Unit	70bar/4 ℓ	●
Center Type Hyd. Supply Unit 2x2(Hydraulic : 4port) + Air 2port		○
Fixture Hyd. Unit	50bar	☆
	Customized	☆
ETC		
Tool Box		●
Customized Color	Need for Munsel No.	☆
CAD&CAM Software		☆

*1 : Please check the filter types with sales representative.

Specifications are subject to change without notice for improvement. / Please refer to the S/W catalog (iRIS) for details by S/W product.

SPECIFICATIONS

Spindle Output/Torque Diagram

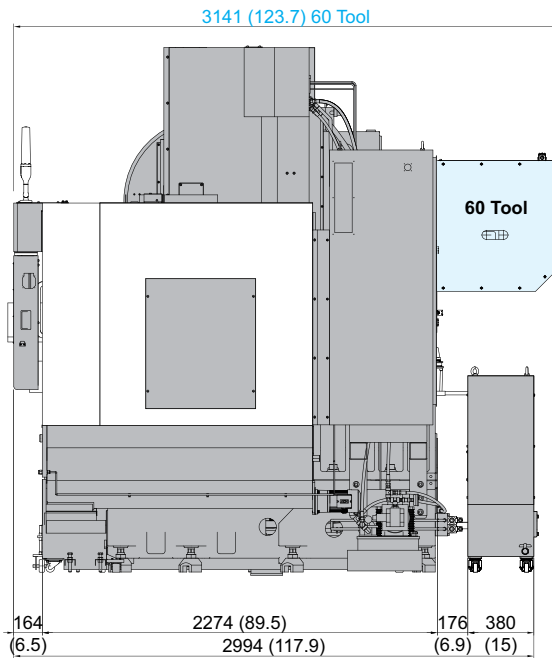
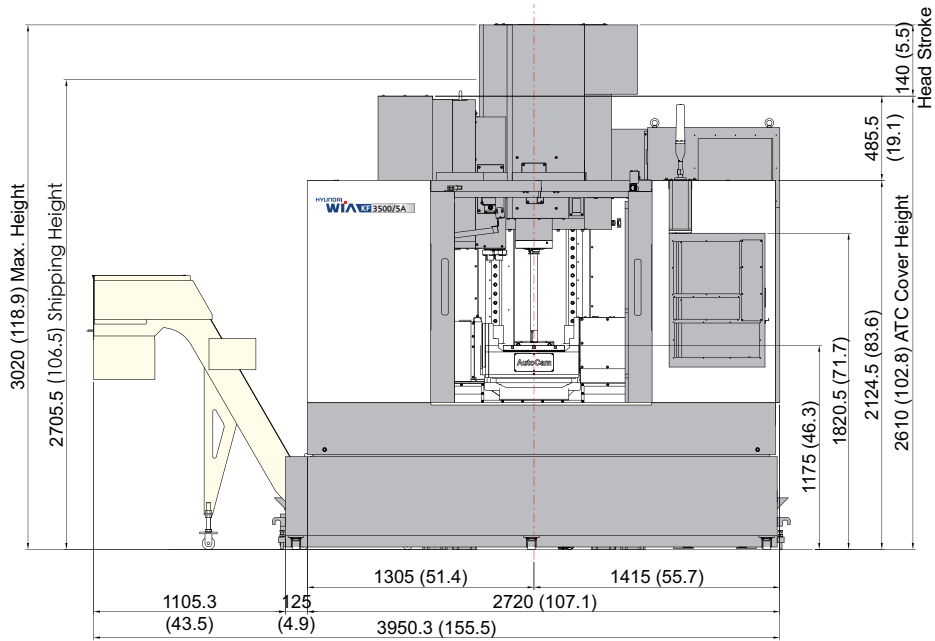


SPECIFICATIONS

External Dimensions

unit : mm(in)

KF3500/5A

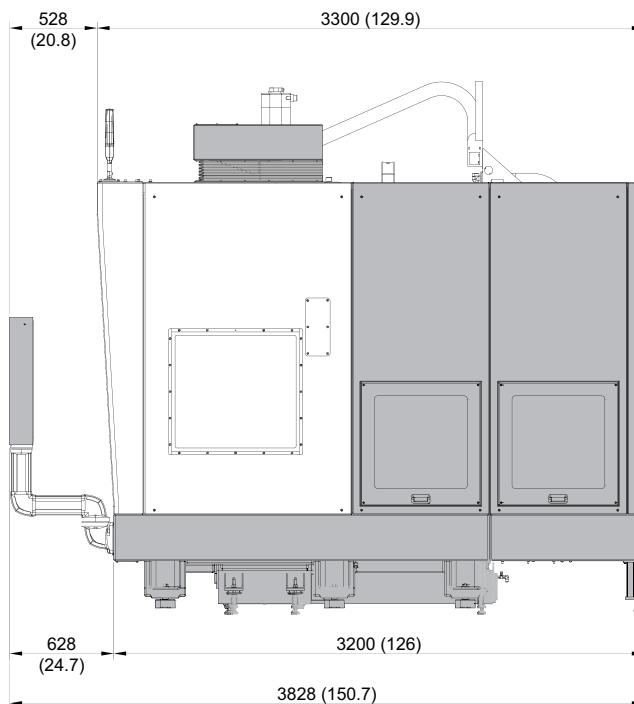
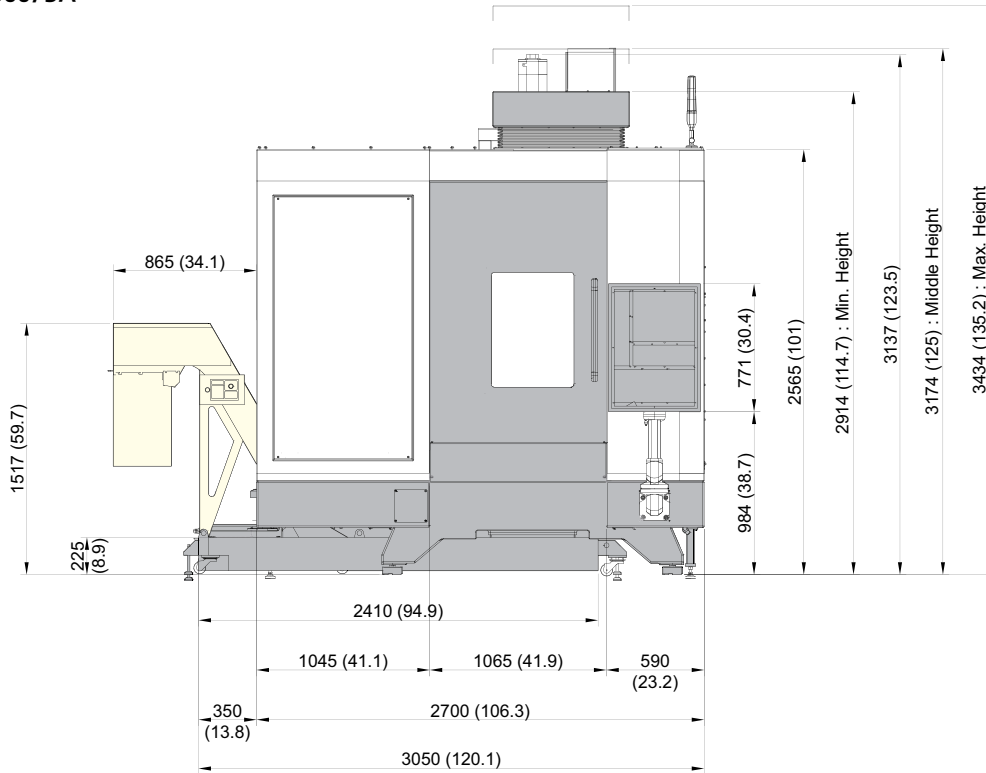


SPECIFICATIONS

External Dimensions

unit : mm(in)

KF7300/5A

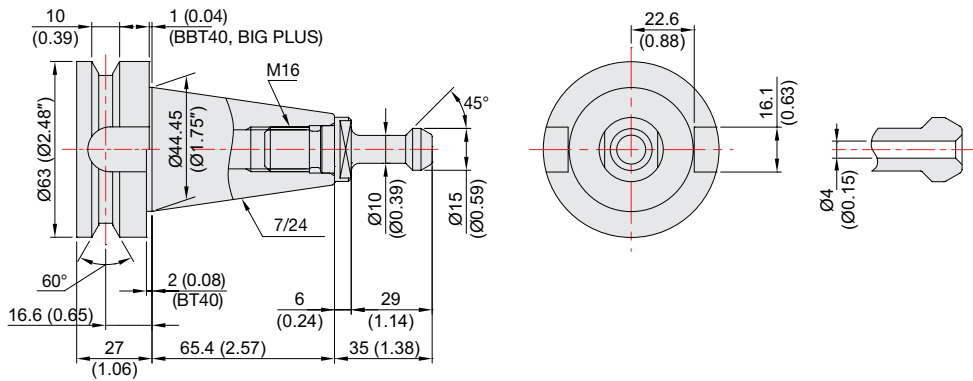


SPECIFICATIONS

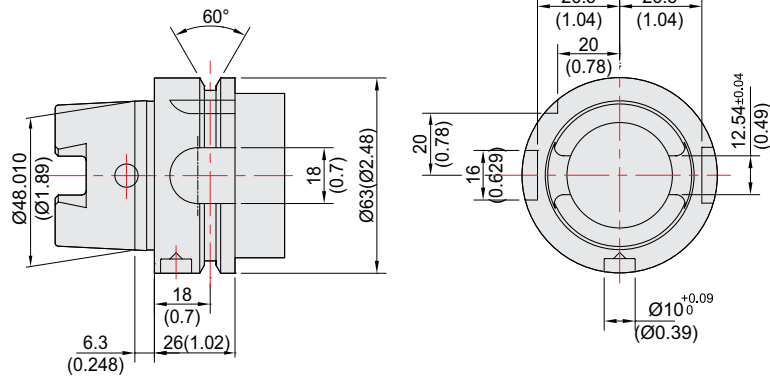
Tool Shank

unit : mm(in)

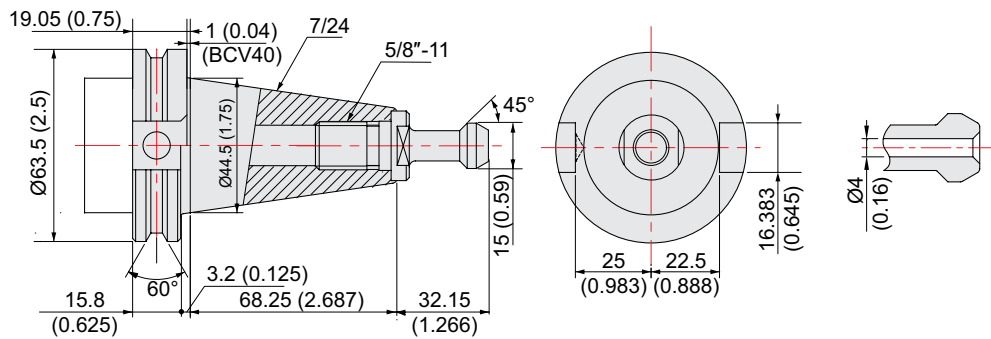
BT40/BBT40, BIG PLUS



HSK A-63



CAT40/BCV40

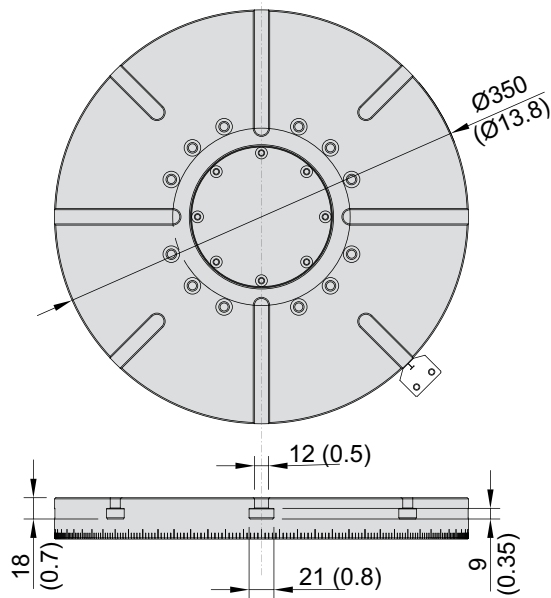


SPECIFICATIONS

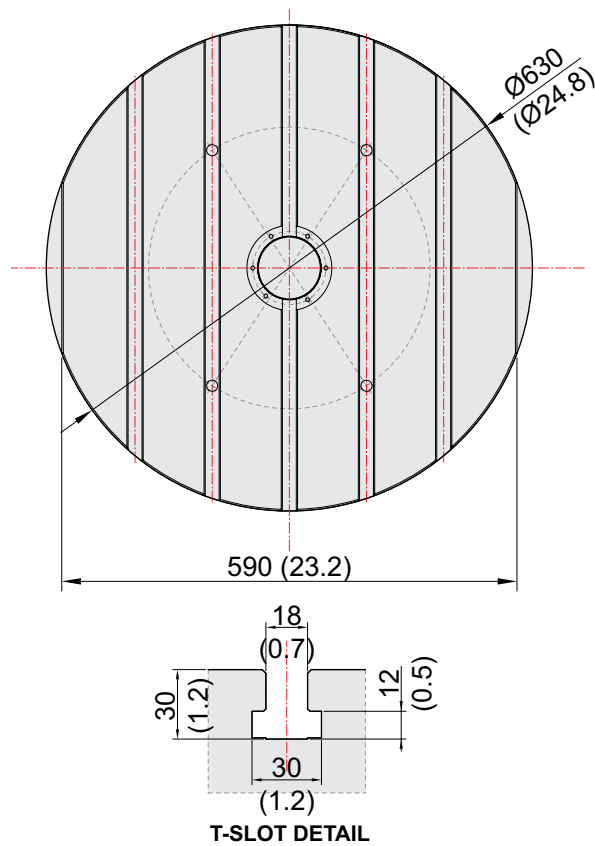
Table Dimensions

unit : mm(in)

KF3500/5A



KF7300/5A



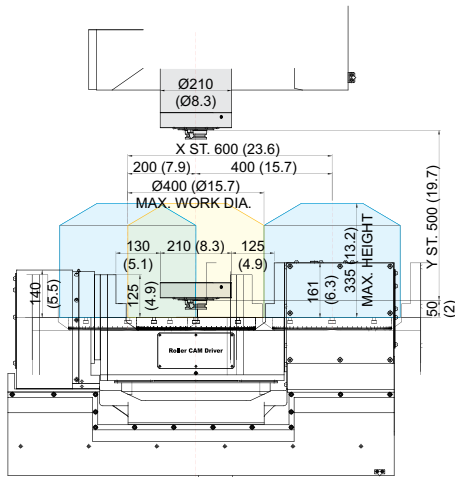
SPECIFICATIONS

Work Interference

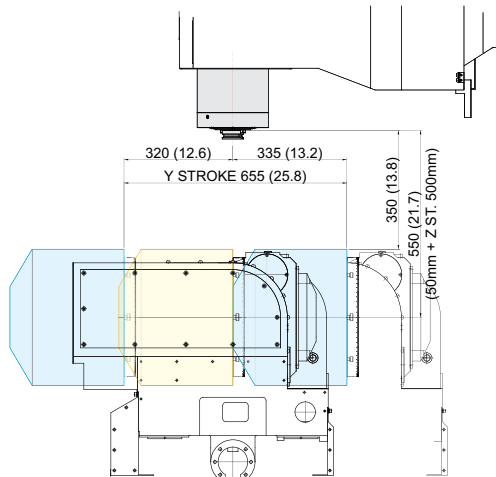
unit : mm(in)

KF3500/5A

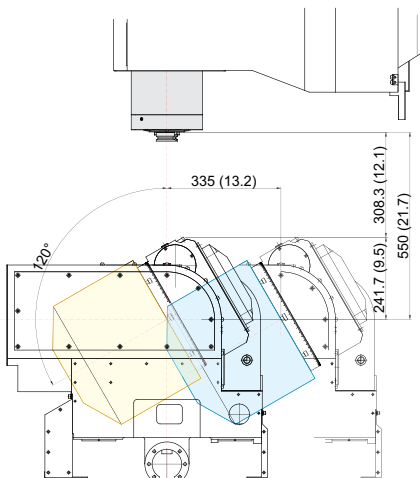
Tilting : A-axis 0°



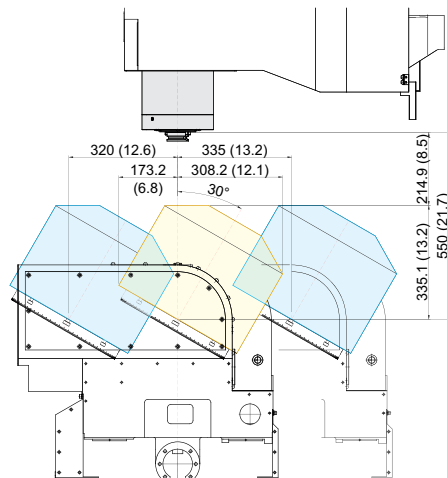
Tilting : A-axis -90°



Tilting : A-axis -120°



Tilting : A-axis +30°



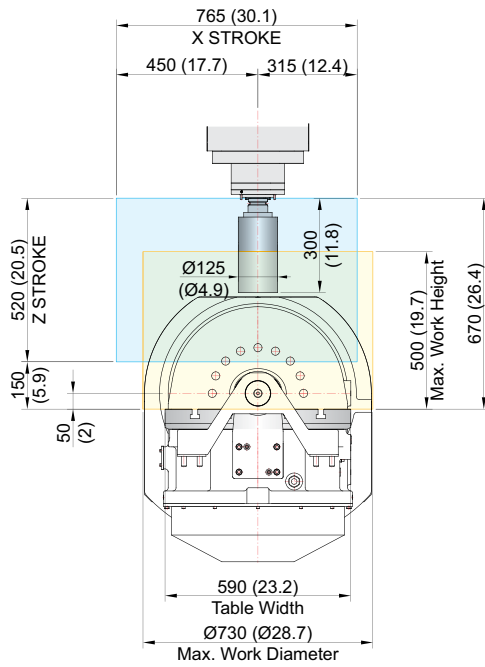
SPECIFICATIONS

Work Interference

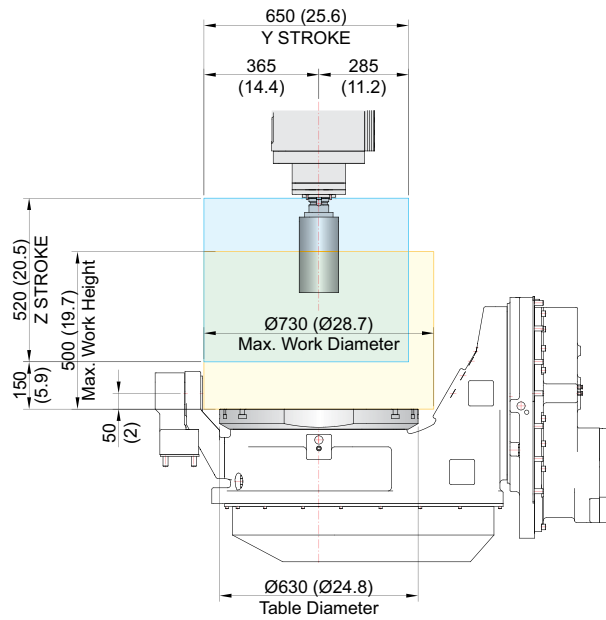
unit : mm(in)

KF7300/5A

Tilting : B-axis 0°

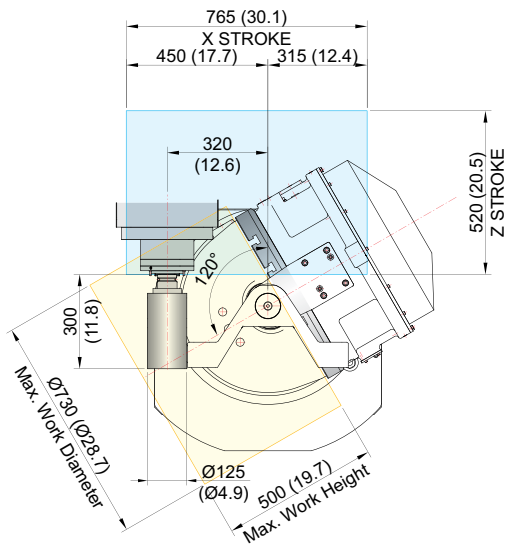


FRONT VIEW



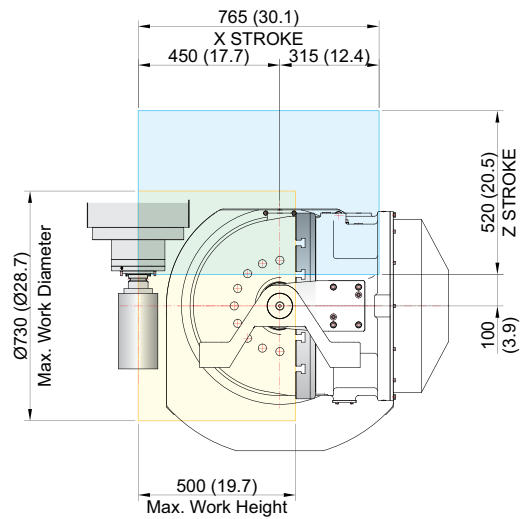
RIGHT VIEW

Tilting : B-axis 120°



FRONT VIEW

Tilting : B-axis 90°



FRONT VIEW

SPECIFICATIONS

Specifications

[] : Option

ITEM			KF3500/5A	KF7300/5A	
TABLE	Table Size (L×W)	mm(in)	Ø350 (Ø13.8")	Ø630 (Ø24.8") [Ø730 (Ø28.7")]	
	Max. Working Size (L×H)	mm(in)	Ø400×335 (Ø15.7"×13.2")	Ø730×500 (Ø28.7"×19.7")	
	Max. Load Capacity	kg(lb)	250 (551) – Max. Inertia : 2.09 kg.m ²	500 (1,102)	
	Table Driving Method	-	Roller Gear Cam	Gear	
SPINDLE	Spindle Taper	-	BBT40	BBT40 [HSK-A63]	
	Spindle Speed (rpm)	r/min	12,000 [15,000] [20,000]	12,000 [20,000]	
	Spindle Power (Max./Cont.)	kW(HP)	18.5/11 (25/15) [18.5/11 (25/15)] [22/18.5 (30/25)]	22/18.5 (30/25) [22/18.5 (30/25)]	
	Spindle Torque (Max./Cont.)	N·m(lb·ft)	118/52.5 (87/38.7) [118/52.5 (87/38.7)] [98/80 (72.3/59)]	207/119 (152.7/87.8) [98/80 (72.3/59)]	
	Spindle Driving Method	-	Direct [Direct] [Built-in]	Built-in	
FEED	Travel	X/Y/Z	mm	400{+200}/655/500 (15.7" {+7.9"}/25.8"/19.7")	765/650/520 (29.5"/25.6"/20.5")
		A(B)/C	deg	150°(+120°~-30°)/360°	
	Distance from Table Top to SP. Nose	mm(in)	50~500 (2"~19.7")	150 ~ 670 (5.9"~26.4")	
	Rapid Traverse Rate	X/Y/Z	m/min(ipm)	36/36/30 (1,417/1,417/1,181)	40/40/40 (1,575/1,575/1,575)
		A(B)/C	r/min	30/40	25/30
Slide Type	-	Roller Guide			
ATC	Tool Shank	-	30 [40, 60]	40 [60]	
	Number of Tools	ea	BBT40	BBT40 [HSK-A63]	
	Max. Tool Dia. (W.T/W.O)	mm(in)	Ø80/Ø125 (Ø3.1"/Ø4.9") [Ø76/Ø125 (Ø3"/Ø4.9")]	Ø76/Ø125 (Ø3"/Ø4.9")	
	Max. Tool Length	mm(in)	Ø76/Ø80 : 270 (10.6"), Ø125 : 210 (8.3")		
	Max. Tool Weight	kg(lb)	8 (17.6)		
	Tool Selection Method	-	Random		
	Tool Change Time (C-C)	sec	3.4	5.4	
TANK CAPACITY	Coolant Tank	ℓ(gal)	365 (96.4)	340 (89.8)	
	Lubricating Tank	ℓ(gal)	4 (1.1)	0.7 (0.18)	
	Hydraulic Tank	ℓ(gal)	15 (4)	4 (1.1)	
POWER SUPPLY	Air Consumption (0.5MPa)	ℓ/min(gal)	110 (29)	575 (151.9)	
	Electric Power Supply	kVA	26	43	
	Thickness of Power Cable	mm ²	Over 25	Over 35	
	Voltage	V/Hz	220/60 (200/50*)		
MACHINE	Floor Space (L×W)	mm(in)	2,845×2,274 (112"×89.5")	3,050×3,300 (120.1"×129.9")	
	Height	mm(in)	3,020 (118.9")	3,174 (125")	
	Weight	kg(lb)	8,000 (17,637)	11,500 (25,353)	
PC	Controller	-	H/WIA FANUC i Series – Smart Plus [FANUC 31i-B5 Plus]	FANUC 31i-B5 Plus	

*) Using 50Hz voltage instead of 60Hz may lower the output of motors. (excluding servo motors and inverter motors)
Specifications are subject to change without notice for improvement.

CONTROLLER

HYUNDAI WIA FANUC i Series – SMART PLUS : KF3500/5A

[] : Option ☆ Needed technical consultation

Controlled axis / Display / Accuracy Compensation	
Control axes	3 axes (X, Y, Z) [4 axes (X, Y, Z, A)] [5 axes (X, Y, Z, A, C)]
Simultaneously controlled axes	3 axes [Max. 4 axes]
Least setting Unit	X, Y, Z axes : 0.001 mm (0.0001 inch) B axes : 1 deg [0.001] deg
Least input increment	X, Y, Z axes : 0.001 mm (0.0001 inch) B axes : 1 deg [0.001] deg
Inch / Metric conversion	
High response vector control	
Interlock	All axes / Each axis
Machine lock	All axes
Backlash compensation	± 0 ~ 9999 pulses (Rapid traverse / Cutting feed)
Position switch	
LCD / MDI	15 inch LCD unit (with Touch Panel)
Feedback	Absolute motor feedback
Stored stroke check 1	Over travel
Stored stroke check 2, 3	
Stored pitch error compensation	
Operation	
Automatic operation (Memory)	
MDI operation	
DNC operation	Needed DNC software / CF card
Program restart	
Wrong operation prevention	
Program check function	Dry run, Program check, Z axis Machine lock Stored limit check before move
Single block	
Search function	Program Number / Sequence Number
Handle interruption	
Interpolation functions	
Nano interpolation	
Positioning	G00
Linear interpolation	G01
Circular interpolation	G02, G03
Exact stop mode	Single : G09, Continuous : G61
Dwell	G04, 0 ~ 9999.9999 sec
Skip	G31
Reference position return	1st reference, G28 / 2nd reference, G30 Ref. position check, G27
Single direction positioning	G60
Thread synchronous cutting	G33
Helical interpolation	Circular + Linear 2 axes (Max.)
Feed function / Acc. & Dec. control	
Manual feed	Rapid traverse Jog : 0~2,000mm/min (79 ipm) Manual handle : x1, x10, x100 pulses Reference position return
Cutting Feed command	Direct input F code
Feedrate override	0 ~ 200% (10% Unit)
Rapid traverse override	1%, 25%, 50%, 100%
Override cancel	
Feed per minute	G94
Feed per revolution	G95
Cylindrical interpolation	G07.1
Inverse time feed	G93
Look-ahead block	200 blocks (AI APC)
Program input	
Tape Code	EIA / ISO
Optional block skip	9 ea
Absolute / Incremental program	G90 / G91
Program stop / end	M00, M01 / M02, M30
Maximum command unit	± 999,999,999 mm (± 99,999,999 inch)
Plane selection	X-Y, G17 / Z-X, G18 / Y-Z, G19
Workpiece coordinate system	G52, G53, 48 pairs (G54.1 P1 ~ 48)
Manual absolute	Fixed ON
Programmable data input	G10
Sub program call	10 folds nested
Custom macro	#100 ~ #199, #500 ~ #999
Programmable mirror image	G51.1, G50.1
G code preventing buffering	G4.1
Optional chamfering corner R	

Program input	
Polar coordinate command	G15, G16
Canned cycle	G73, G74, G76, G80 ~ G89
Scaling	G50, G51
Coordinate system rotation	G68, G69
Conversational Program	Smart Guide-i
Auxiliary function / Spindle speed function	
Level-up M Code	Multi / Bypass M code
Spindle speed function	S & 5 digit , Binary output
Spindle override	0% ~ 150% (10% Unit)
Spindle orientation	M19
Retraction for rigid tapping	
FSSB high speed rigid tapping	
Tool function / Tool compensation	
Tool function	Max. T8 digit
Tool life management	
Tool offset pairs	400 pairs
Tool nose / radius compensation	G40, G41, G42
Tool length offset	G43, G44, G49
Tool offset memory C	Tool geometry and wear (Cutter and tool length)
Tool length measurement	Z axis Input C
Editing function	
Part program storage size	5,120m (2MB)
No. of registerable programs	1,000 ea
Program protect	
Background editing	
Extended part program editing	Copy, move and change of NC program
Memory card program edit	
Data input / output & Interface	
I/O interface	CF card, USB memory Embedded Ethernet interface
Screen hard copy	
External message	
External key input	
External workpiece number search	
Automatic data backup	
Setting, display and diagnosis	
Self-diagnosis function	
History display & Operation	Alarm & Operator message & Operation
Run hour / Parts count display	
Maintenance information	
Actual cutting feedrate display	
Display of spindle speed / T code	
Graphic display	
Operating monitor screen	Spindle / Servo load etc.
Power consumption monitoring	Spindle & Servo
Spindle / Servo setting screen	
Multi language display	Support 24 languages
Display language switching	Selection of 5 optional Languages
LCD Screen Saver	Screen saver
Option	
Fast ethernet	Needed option board
Data server	Needed option board
Protection of data at 8 levels	
Additional Axis	
Manual handle feed	2/3 units #100 ~ #199, #500 ~ #999, #98000 ~ #98499
Add. Workpiece	Max. 300 pairs (G54.1 P1 ~ P300)
AICC II	400 blocks ☆

Figures in inch are converted from metric values.

The FANUC controller specifications are subject to change based on the policy of company CNC supplying.

CONTROLLER

FANUC 31i-B5 Plus : KF3500/5A, KF7300/5A

[] : Option ☆ Needed technical consultation

Controlled axis / Display / Accuracy Compensation	
Control axes	5 axes (X, Y, Z, A, C : KF3500/5A) 5 axes (X, Y, Z, B, C : KF7300/5A)
Simultaneously controlled axes	5 axes (X, Y, Z, A, C : KF3500/5A) 5 axes (X, Y, Z, B, C : KF7300/5A)
Least setting Unit	X, Y, Z axes : 0.001 mm (0.0001 inch) B axes : 1 deg [0.001] deg
Least input increment	X, Y, Z axes : 0.001 mm (0.0001 inch) B axes : 1 deg [0.001] deg
Inch / Metric conversion	G20 / G21
High response vector control	
Interlock	All axes / Each axis
Machine lock	All axes
Backlash compensation	± 0 ~ 9999 pulses (Rapid traverse / Cutting feed)
Position switch	
LCD / MDI	15" color LCD with Touch screen
Feedback	Absolute motor feedback
Stored stroke check 1	Over travel
Stored stroke check 2, 3	
Pitch error compensation	Interpolation Type
Operation	
Automatic operation (Memory)	
MDI operation	
DNC operation	Needed DNC software / CF card
Program restart	
Wrong operation prevention	
Program check function	Dry run, Program check Z axis Machine lock, Stroke check before move
Single block	
Search function	Program Number / Sequence Number
Handle interrupt	
3D Manual Feeding	
Retraction for rigid tapping	
Manual guide i	Smart Guide i
Interpolation functions	
Nano interpolation	G05.1
Positioning	G00
Linear interpolation	G01
Cylindrical interpolation (Including 3D)	G02, G03 (G02.4, G03.4)
Exact stop mode	Single : G09, Continuous : G61
One-way positioning	G60
Inverse-time feed	G93
Dwell	G04, 0 ~ 9999.9999 sec
Skip	G31
Reference position return	1st reference : G28 2, 3, 4 reference : G30 P2, P3, P4 Ref. position check : Z7
Thread synchronous cutting	G33
Helical interpolation	Circular + Linear interpolation 2 axes (max.)
Feed function / Acc. & Dec. control	
Manual feed	Rapid traverse Jog : 0~5,000mm/min (197 ipm) Manual handle : x1, x10, x100 pulses Reference position return
Cutting Feed command	Direct input F code
Feedrate override	0 ~ 200% (10% Unit)
Rapid traverse override	F0% (F1%), F25%, F50%, F100%
Override cancel	
Feed per minute	G94
Feed per revolution	G95
Look-ahead block	600 Block
Program input	
Tape Code	EIA / ISO
Optional block skip	1 ea
Absolute / Incremental program	G90 / G91
Program stop / end	M00, M01 / M02, M30
Maximum command unit	± 999,999.999 mm (± 99,999.9999 inch)
Plane selection	X-Y : G17 / Z-X : G18 / Y-Z : G19
Workpiece coordinate system	G52, G53, 48 pairs (G54.1 P1 ~ P48)
Manual absolute	Fixed ON
Programmable data input	G10
Sub program call	10 folds nested
Sub program call	10 folds nested

Controlled axis / Display / Accuracy Compensation	
Custom macro	#100~#199, #500~#599, #98000~#98499
G code system	A
Inclined surface command / Tool axis direction control	G68.2 / G53.1
Scaling	G50, G51
Programmable mirror image	G51.1, G50.1
Polar coordinate command	G15, G16
Do not look ahead function	G4.1
Including Chamfering / Corner R	
Canned cycle	G73, G74, G76, G80 ~ G89
Coordinate rotation	G68, G69
Auxiliary function / Spindle speed function	
Auxiliary function	M 4 digit
Level-up M Code	Multi / By-Pass
Spindle speed command	S 5 digit , Binary output
Spindle override	50% ~ 120% (10% Unit)
Spindle orientation	M19
FSSB high speed rigid tapping	
Tool function / Tool compensation	
Tool function	Max. T 8 digit
Tool life management	256 pairs ☆
Tool offset pairs	400 pairs
Tool nose radius compensation (Including 3D)	G40, G41, G42 (G41.2~6, G42.2~6)
Tool nose length compensation (With leading point control)	G43, G44, G49 (G43.4~5)
Tool offset memory C	Tool length, diameter, abrasion(length, diameter)
Tool length measurement	Z axis Input C
Editing function	
Part program storage size	10240m (4MB)
No. of registerable programs	1,000 ea
Program protect	
Background editing	
Extended part program editing	
Memory card program edit	Copy, move and change of NC program
Protection of data at 8 levels	
Data input / output & Interface	
I/O interface	RS 232C serial port Memory card, USB memory interface Embedded Ethernet interface Fast ethernet (100 MBps)
Screen hard copy	
External message	
External key input	
External workpiece number search	
Automatic data backup	
Setting, display and diagnosis	
Self-diagnosis function	
History display	Alarm & Operator message & Operation
Run hour / Parts count display	
Maintenance information	
Actual cutting feedrate display	
Display of spindle speed / T code	
Graphic display	
Operating monitor screen	
Power consumption monitoring	Spindle & Servo
Multi language display	Support 25 languages
Display language switching	Selection of 5 optional Languages
LCD Screen Saver	Screen saver
Macro Excutor	Custom software 8MB (WIA Screen)☆
Processing select	Speed/rigidity setting
Option	
Additional optional block skip	9 ea ☆
Data server	1GByte, 2GByte, 4GByte
Sub Spindle control	☆
Polar coordinate interpolation	G12.1, G13.1
Cylindrical interpolation	G07.1
Manual handle feed	2/3 units
Tool management function	
Tool offset number	499 ~ Max. 2,000 pair
Program storage capacity	~32MByte
Program registration number	Max. 4,000 ea
Additional work coordinate	300 pair (G54.1 P1 ~ P300)

Figures in inch are converted from metric values.

The FANUC controller specifications are subject to change based on the policy of company CNC supplying.

MOVEMENT FOR BETTER TOMORROW



ECO FRIENDLY

Minimizing Environmental Impact and Maintaining Sustainable Ecology

01

**Achieve
carbon
neutrality**

- Develop Net-zero Roadmap
- Heighten carbon emissions management
- Achieve carbon neutrality goals

02

**Boost
resource
circulation**

- Detail plans to reduce environmental impact
- Gradually reduce pollutant emissions
- Build eco-friendly supply chain

03

**Establish
environmental
management
framework**

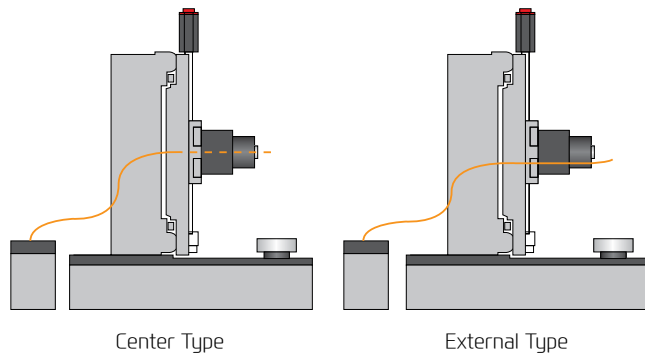
- Set up environmental management process
- Assess business impact of climate change risks

HYUNDAI WIA ECO SYSTEM

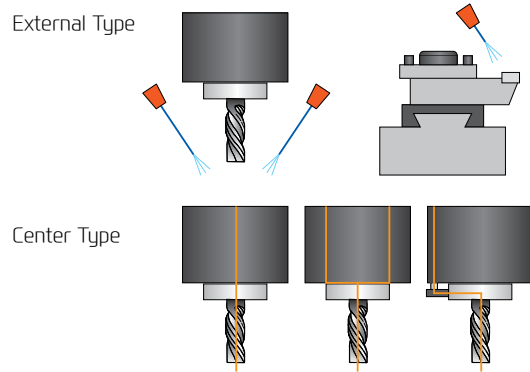
MQL (Minimal Quantity Lubrication)

The goal of this system is to spray only the amount of lubricant required to prevent heat and chip build up at the cutting tool or work piece face.

Example of Machining Center Application



Example of Etc.



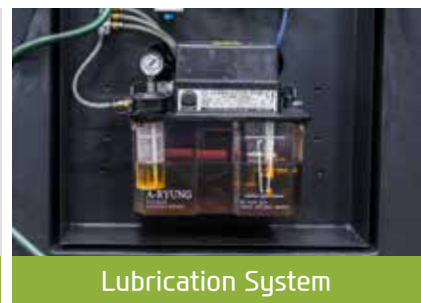
Oil Skimmer

An oil skimmer can increase coolant and tool life by removing tramp oil contaminants.



Mist Collector

Mist Collector reduces the amount of smoke and oil mist in the air. This helps build a safe and comfortable working environment and improve durability.



Lubrication System

By applying lubricant only when the machines axis are moving lubrication consumption is reduced by compared to standard systems.

HYUNDAI WIA ENERGY SAVING

HW-ESS (HYUNDAI WIA Energy Saving System)

HYUNDAI WIA Machine tool provides the optimum power saving function that can easily save energy with an intuitive user interface.



- 1. Machine-ready power saving function** : Put all servo motors and other motors into sleep mode when no control or operation is done for a set time
- 2. Work light auto-off function** : The work light is turned off automatically when no control or operation is done for a set time
- 3. Chip conveyor auto power saving** : Operation/non operation time (timer) can be set to save energy
- 4. Auto Power-off** : Auto power off after ending the an operation after a period of time
- 5. Eco function** : Machine ready sleep mode can be activated/de-activated from the controller panel
- 6. Power consumption monitor** : Real time power consumption can be monitored through the OP screen



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www.youtube.com/HYUNDAIWIAMT

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HYUNDAI WIA Machine Tools
Global Links

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